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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|-----------------------|---------------------|------------------|
| 09/936,816 | 01/04/2002 | Oliver Hartwig Werner | 50060-045 | 1464 |
| 20277 | 7590 | 03/21/2005 | EXAMINER | |
| MCDERMOTT WILL & EMERY LLP 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096 | | | TABATABAI, ABOLFAZL | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2625 | |
| DATE MAILED: 03/21/2005 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|--------------------|---------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/936,816 | WERNER ET AL. |
| | Examiner | Art Unit |
| | Abolfazl Tabatabai | 2625 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 04 January 2002.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-81 is/are pending in the application.
 4a) Of the above claim(s) 4-19,21-61,64-69,73-77 and 79 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-3,20,62,63,70-72,78,80 and 81 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>5/4/04;1/27/04</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Claim Objections

1. Claims 4-19, 21-61, 64-69, 73-77 and 79 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim (s). See MPEP § 608.01(n). Accordingly, the claims 4-19, 21-61, 64-69, 73-77 and 79 have not been further treated on the merits.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 20, 62, 63 and 70-72 are rejected under 35 U.S.C. 102(e) as being anticipated by Vynne et al (U S 5,960,081).

Regarding claim 1, Vynne discloses a method of embedding a watermark signal comprising a series of watermark values in a picture signal comprising a series of picture sample values (column 13, lines 30-32), the method comprising adjusting picture sample values based on watermark values (column 2, lines 56-66), characterized in that adjusting comprises, for each watermark value (column 28, lines 1-6); combining the watermark value with a respective subset of the picture sample values using a plurality of adjustment factors (column 22, lines 1-22 and column 28, lines 1-6),

each adjustment factor being based on a local estimate of the visibility of the watermark at a corresponding picture sample location (column 31, lines 49-54)

Regarding claim 2, Vynne discloses a method according to Claim 1 wherein the magnitude of each adjustment factor is a function of the picture sample values (column 8, line 52 and column 28, lines 1-6), preferably based on the Localized variance of the picture sample values (column 2, lines 37-48).

Regarding claim 3, Vynne discloses a method according to Claim 1 or Claim 2, wherein the sign of each adjustment factor is a function of the watermark values (column 28, lines 1-6).

Regarding claim 20, Vynne discloses a method of embedding a watermark within a sequence of pictures corresponding to a motion video sequence wherein the watermark is combined with picture sample values characterized in that the method of combining varies from picture to picture to reduce the appearance of static artifacts in the sequence (column 22, lines 1-22 and column 28, lines 27-33).

Regarding claim 62, Vynne discloses a method of decoding data in a picture signal comprising determining local mean values of picture samples corresponding to regions of the picture in which data is carried (column 13, lines 30-32); comparing said local mean values to estimated or reference local mean values for said regions in the absence of the data, and determining a data value from the result of each comparison (column 9, lines 36-44), wherein preferably the data value is determined from at least the sign of the difference between the determined local mean value and the estimated or reference local mean value (column 8, lines 10-16).

Regarding claim 63, Vynne discloses a method of embedding data comprising a series of data values in a picture comprising a series of picture values characterized by defining a plurality of subsets of the picture values (column 2, lines 37-48), one subset for each data value and adding an adjustment factor to each picture value in each subset (column 28, lines 1-6), a first component (column 25, lines 23-29), preferably the magnitude 9column 8, line 52), of each adjustment factor being a function of an estimate of the visibility of embedded data at the picture value location and being variable between the picture values of each subset 9column 31, lines 49-54), a second component, preferably the sign, of the adjustment factor being determined by the data value and being substantially constant for the picture values of each subset (column 28, lines 1-6).

Regarding claim 70, Vynne discloses a method of embedding a watermark in a moving picture comprising changing the watermark or moving the watermark (column 11, lines 15-24), preferably substantially randomly (column 33, lines 12-16), at a shot change, or following detection of an accumulated change in picture content above a predetermined threshold (column 17, lines 18-27).

Regarding claim 71, Vynne discloses a method of embedding a data-carrying watermark in a moving picture comprising changing the data carried by the watermark at a shot change (column 11, lines 15-24),, or following detection of an accumulated change in picture content above a predetermined threshold (column 17, lines 18-27).

Regarding claim 72, Vynne discloses a method of embedding a data-carrying watermark in a moving picture

comprising moving the watermark when the data content of the watermark changes (column 11, lines 15-24), preferably at a shot change or following detection of an accumulated change in picture content above a predetermined threshold (column 17, lines 18-27).

4. Claim 78 is rejected under 35 U.S.C. 102(e) as being anticipated by Levine et al (U S 6,209,094 B1).

Regarding claim 78, Levine discloses a method of detecting a watermark in a sequence of moving pictures comprising determining an expected position of the watermark and thereafter detecting the watermark based on the expected position, wherein the expected position is re-determined following a shot change or a change in picture content above a threshold (column 18, lines 16-28 and column 19, lines 59-67).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 80 and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levine et al (U S 6,209,094 B1) in view of Vynne et al (U S 5,960,081).

Regarding claim 80, Levine discloses a method of embedding data in a picture comprising:

generating a data-carrying watermark having a plurality of watermark values by convolving a set of data comprising a plurality of bits of data with a key comprising a plurality of bits (column 4, lines 51-57 and column 17, lines 1-15).

However, Levine is silent about the specific details regarding the step of:

applying the watermark to the picture by combining each watermark value with a plurality of picture values based on a local estimate of the visibility of the watermark.

In the same field of endeavor, (watermarking), however, Vynne discloses embedding a digital signature in a video sequence comprising the step of:

applying the watermark to the picture by combining each watermark value with a plurality of picture values based on a local estimate of the visibility of the watermark (column 22, lines 1-22 and column 31, lines 49-54).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use combining each watermark value with the picture values based on a local estimate of the visibility of the watermark as taught by Vynne in the system of Levine because Vynne provides Levine an improved system and method to

protect video materials by modifying motion information with a digital signature, and is therefore very well suited for hiding signature information into video sequences. Also this system could be further improved to achieve an even more reliable and robust watermarking procedure.

Regarding claim 81, Levine discloses a method according to Claim 80 for sequence of pictures wherein sets of data are embedding a data stream in a generated at intervals from the data Stream and each set is embedded in a plurality of pictures (column 11, lines 33-54).

Other Prior Art

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rhoads (U S 5,850,481) discloses steganographic system.

Nakamura et al (U S 6,185,312 B1) disclose method for embedding and reading watermark-information in digital form, and apparatus thereof.

Bhasharan et al (U S 6,064,764) disclose fragile watermarks for detecting tempering in images.

Cox et al (U S 6,154,571) disclose robust digital watermarking.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABOLFAZL TABATABAI whose telephone number is (703) 306-5917.

The examiner can normally be reached on Monday through Friday from 9:30 a.m. to 7:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mehta Bhavesh M, can be reached at (703) 308-5246.

Any response to this action should be mailed to:

Assistant Commissioner for Patents
Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for *formal* communications; please mark
"EXPEDITED PROCEDURE")

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA. Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 305-4750
Abolfazl Tabatabai

Patent Examiner

Group Art Unit 2625

March 16, 2005

kanjibhai Patel
KANJI BHAI PATEL
PRIMARY EXAMINER